

N<sup>o</sup> 22,535



A.D. 1911

Date of Application, 12th Oct., 1911.

Complete Specification Left, 13th Mar., 1912—Accepted, 25th July, 1912

PROVISIONAL SPECIFICATION.

Improvements in or relating to Tubes.

We, THE YORKSHIRE COPPER WORKS, LIMITED, of Pontefract Road, Leeds, in the County of York, and KENNETH FRASER, General Manager of the said Yorkshire Copper Works, Limited, do hereby declare the nature of this invention to be as follows:—

- 5 This invention relates to an improved form of tubing, intended more especially for condenser tubes, such improved tubing being designed to combine the strength and stiffness of a brass tube, with the anti-corrosive properties of a copper tube.

- 10 For this purpose my invention consists essentially in making (by any convenient process) a brass tube of suitable strength with a non-corrosive lining of copper of suitable thickness, such combination brass-and-copper tubing being particularly suitable for condenser tubes and like purposes.

Dated this 11th day of October, 1911.

For the Applicants,

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JOHN E. WALSH,  
Leeds and Halifax,  
Chartered Patent Agent,

COMPLETE SPECIFICATION.

Improvements in or relating to Tubes.

- 20 We, THE YORKSHIRE COPPER WORKS, LIMITED, of Pontefract Road, Leeds, in the County of York, and KENNETH FRASER, General Manager of the said Yorkshire Copper Works, Limited, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- 25 This invention relates to an improved form of tubing, intended more especially for condenser tubes, such improved tubing being designed to combine the strength and rigidity of a brass tube, with the anti-corrosive properties of a copper or like tube.

- 30 For this purpose our invention consists essentially in making a brass tube or shell of suitable strength with a non-corrosive lining of copper or the like of suitable thickness. The outer shell may be either of ordinary brass or gun-metal, or of a special ductile gunmetal known as "gumal", in combination with an inner lining either of copper or of some special non-corrosive alloy of which copper is the predominating constituent.

- 35 Our improved combination brass-and-copper tubing is drawn or formed by any convenient process, and is particularly suitable for condenser tubes, and like purposes.

We are aware that it has already been proposed to make lead or like soft or

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*Improvements in or relating to Tubes.*

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compressible metal tubing with an inner lining of tin or other non-corrosive metal, in combination with an intermediate packing of non-conducting material; and also that it has been proposed to stiffen ribbed copper tubes by a galvanising or like process whereby a part of the copper is converted into brass or like alloy. 5

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

An improved combination tubing comprising an outer shell of brass or like comparatively rigid metal and an inner lining of copper or like non-corrosive 10 metal, substantially as herein set forth.

Dated this 12th day of March, 1912.

For the Applicants,

JOHN E. WALSH,  
Leeds and Halifax,  
Chartered Patent Agent. 15

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